

Docket No. 020547

Serial No. 10/632,400

REMARKS/ARGUMENTS

The present invention is a method and apparatus for determining a position, velocity, and direction of a subscriber station in a wireless communication system by using triangulation measurements between the subscriber station and a combination of satellite and ground base sources in order to support handover decisions. The presently claimed invention uses certain parameters for making the handover decision. These parameters are estimates of position, velocity, and direction of motion of the handset or the subscriber station. The direction of the motion of the handset is critical for triggering the handover decision. See, page 4, paragraphs 11 and 12 of the present patent application. The present invention provides a handover decision (apart from methods in prior art) in response to a triggering event. The triggering event is a handover rate experienced by handset. By using the present invention a user avoids back and forth handover by blocking a handover back to a micro-cell for a time. The triggering event is directed by a retry condition from a micro cell to an umbrella cell. A directed retry is made in the case of a blocked incoming call. The direction of motion is used in response to the trigger. Location, velocity, and direction of motion is a tool to help the triggers of handover decisions. Direction of motion is not available or described in any of the cited prior art patents.

The prior art reference, Jones, et al., teaches a method and apparatus for handover decisions; however, the system is significantly different than the present invention. Jones, et al., measures signal strength received at a mobile station from a control cell and comparing the received signal with a parameter value to determine a handover decision based on the comparison results. The parameter used in Jones, et al., for the handover decision is signal strength. A stationary or slow moving mobile station is managed by an umbrella cell, while the fast moving mobile station is managed by micro cell.

The second reference cited by the examiner is Vayanos. This patent teaches a method of estimating a velocity of a terminal in a wireless communication system. This invention focuses on how to estimate the velocity of a mobile terminal from satellite information and/or base stations on the ground.

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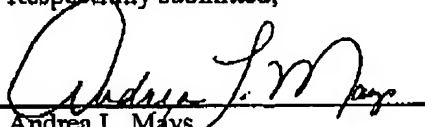
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Claims 1-31 were rejected under 35 USC § 103(a) as being unpatentable over Jones, et al., in view of Vayanos. In rejecting the independent claims (claims 1, 18 and 31), the Examiner stated that the Vayanos patent teaches "obtaining an estimate of position, velocity or direction of motion of a subscriber station...". The Applicant vigorously disagrees. Vayanos specifically determines velocity as specifically set out throughout the specification. There is no mention of determining, using or implying the use of a direction of motion. This specific feature is unique as used in the present invention. Further, to more clearly set out the uniqueness of the claimed invention, independent claims 1, 18, and 31 have been amended to include the feature of estimating the direction of motion by deleting the "or" and inserting an "and" between the parameters. Thus, with these amendments, the independent claims are allowable. Further, due to the allowability of the independent claims, the dependent claims are also allowable.

Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

Dated: November 22, 2005

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